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NEVADA CLIMATE SUMMARY

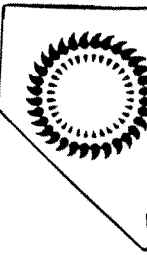
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SYNOPSIS

Documents Section

December was unusually dry Statewide, with no precipitation in the western half of the Silver State and no storm activity in the Sierra Nevada for the first time in over a century. This is a significant occurrence because December is normally one of the wettest months of the year. The 3 1/2 year long drought has now reached an extreme point, with most of the State having less than 1/2 the normal Water Year (October 1 through January 1). Precipitation in the critical Sierra Nevada and Humboldt watersheds during the first 3 months of Water Year 1990 is generally only 1/2 to 2/3 normal. Add to this poor surface and ground water storage due to the long drought situation and Summer 1990 water shortages seem a certainty.

Adding to the drought problem was a continuation of the above normal temperature and evaporation pattern that began again in November. All but the northwest corner of the State basked in the above normal temperatures, with record sunshine for December for most of Nevada.

TEMPERATURE

Temperature departures from normal ranged from one degree below normal at Lovelock and Denio in the northwest to three degrees above normal in a portion of the Northeast (e.g. Austin +3 1/2 degrees), the Far West (Reno +3 1/2 degrees), Central Nevada (Tonopah +3 1/2 degrees), and the South (e.g. Boulder City and Searchlight +3 degrees). Unusually clear skies for December allowed for maximum daytime heating and night time cooling so that daily temperature spreads were much greater than usual. Also, valley temperature inversions were common, and more like Spring and Fall than Winter.

The unusual warmth led to only a few days of below zero weather, and then only a little below that point. Carvers Station's (in Big Smokey Valley) weather observer Reeve Duhme recorded -6 degrees, as did Wildhorse Reservoir with a -4 at Gibbs Ranch. Mary Lou Wise logged -3 degrees at Deeth. This is far from the -45 recorded at San Jacinto (north of Wells) in December 1924. Also unusual was the similarity of low temperatures in the Northeast to much of the rest of the State. Usually it is much colder there in a winter month because of cold air outbreaks from Canada. That didn't happen this month, so minima reached at Caliente (+6), Honey Lake Ferrel (+6), the Hesselschwerdt's Ranch at Red Rock near Reno (+6), Silverpeak (+3), and Fernley (+2) were not much warmer than Mountain City (0).

On the warm side of the scale, no pronounced heat waves were noted, so the almost steady mild days produced a State high of only 77 degrees, recorded at Callville Bay, Amargosa Farms Garey, and by the Clark County Fire Department at Laughlin. The December state record is 91 degrees recorded in 1910 in Las Vegas by long time weather observer, Charles "Pop" Squires. He logged Vegas Valley temperatures and precipitation for almost 50 years.

The Lake Mead water temperature crept down from 62 degrees to 57 degrees at month's end.

Heating requirements were less than normal as the 1980's ended with both November and December going easy on the homeowner's winter clothing and heating budget.

PRECIPITATION

This was one of the driest Decembers on record in Nevada, with all but the extreme Northwest corner of the State having less than one-half the normal precipitation, and the western half of the Silver State having none. Only Denio, the wettest location, with .79" (96% of normal) was near normal. Elko had about 1/2 the normal amount. Locations in the Sierra Nevada that average 6-8" this second wettest month of the winter had none. In Reno the trace of moisture was the first time since December 1930 that that small an amount has occurred. It has been 108 years since there was not a trace in Reno in December. For only the 5th time in the 83 years of climate record at Las Vegas, and the first during the Fall-Winter period, was there four consecutive months with no measurable precipitation. The last rain fell in Las Vegas in mid August. There are usually 14 rainy days from June through December, but only four in 1989.

Adding to the future drought problem was the complete lack of new Sierra Nevada snowfall. This coupled with relatively mild temperatures had the snowpack water content at only 1/4-1/2 normal for this time of year, with a worse picture at most other locations in the State.

SUNSHINE, WIND AND EVAPORATION

This was one of the sunniest Decembers on record Statewide as a persistent high pressure ridge kept normal west-east moving Pacific storms away from Nevada. Since such records have been kept, Reno has not had the 85-90% of possible sunshine hours it logged this month. The usual in December is only 64% of such hours. The same is true for Winnemucca as 84% of the possible sun hours were recorded and an average of only 50%. Ditto for Las Vegas as 94% of the possible hours were recorded against a 78% normal.

The dominant high pressure ridge also caused little pressure gradient over Nevada so winds were unusually light, in fact one the calmest on record for December in the Reno area.

Pan evaporation was measured at only two Southern Nevada sites, where it was about 125% of normal at Boulder City (4.11") and Logandale (3.22"). Although ice formation caused other colder locations to have stored pans, evaporation was also above

normal. Thus, with little or no moisture coming in this month and more than normal going out, for "water watchers," December was a "downer."

NOTE #1: "The climate of Nevada is the most delightful and salubrious in the known world. Neither the prostrating heats and destructive cyclones, nor the Arctic frosts and the deadly blizzards of the Midwestern States are known here. The deadly consumption breeding fogs and countless insect pests that swarm in other lands are also strangers in Nevada. The warmest days of summer are modified by soft southwest winds, laden with the sweet odor of wild flowers and the invigorating aroma of the indigenous sage; while the nights are seasons of transcendent loveliness, rendered so by the gentle mountain breezes that waft health and vigor to the sleeper." So wrote Mr. Charles W. Friend, Director of the Nevada State Weather Service, organized by state law in February, 1888, describing his first love, Nevada Weather, in his report to the Governor in 1889.

The program of accumulation and publication of weather data begun under Mr. Friend's direction was a lifesaver to many valuable records for the State. In spite of his efforts, some records were lost, but his collection forms the basis on which the early climate of the State can be determined. This valuable data is archived in the Nevada State Climatology Library, Room 322, Mackay Science Hall, University of Nevada, Reno. In 1860, before Friend's arrival on the scene the Army unit stationed at Fort Churchill began routine observations of precipitation and their compatriots at Camp Halleck in Elko County followed suit in 1862.

Much of our knowledge of Nevada's early weather, however, we owe to the station agents of the Southern Pacific Railroad. In February, 1870, at such locations as Golconda, Winnemucca, Elko, Wells, Reno and Battle Mountain, fifteen station agents began collecting precipitation records on a daily basis and many of these continue under the cooperative observer program of the National Weather Service program today. In 1875 the Carson Weather Observatory was opened with what was then very complete meteorological equipment. Records from this observatory were published in reports to state officials and this formed the nucleus of the expanded Nevada Weather Service which began operation in 1888.

The dean of weather observers, insofar as Nevada is concerned, was C.P. "Pop" Squires of Las Vegas, Nevada who passed away several years ago. He published his weather observations in his newspaper, The Las Vegas Age, until 1957 when he was forced to retire because of failing eyesight, after 50 years of weather observing. Squires was a part of the national cadre of 11,000 volunteer weather observers that faithfully record temperature, precipitation, and other weather elements daily. The records enable the weather service and the states to provide an effective climatological data base for the nation. Without the data provided by cooperative observers knowledge of the many climates of the United States would be incomplete. The value of

climatological data is immeasurable. The services performed by these volunteer observers are in the highest tradition of American heritage. The value of weather observations adds directly and indirectly to the social and economic welfare of all Americans. The observations are important in helping solve problems concerning the conduct of industry, commerce, and agriculture in the United States.

NOTE #2: In her continuing search through the old Nevada climate records, Eleona Neal has uncovered some more interesting items. For example, at Cloverdale Ranch, (in northern Nye County, about half way between Gabbs and Tonopah) on May 29, 1896, observer F.G. Troy recorded 8.06" of rain in one day, with 6.50" of that in one 1/2 hour period! The Cloverdale climate record was only 1 1/2 years long, but that deluge, accompanied by hail, thunder and lightning that "knocked all the leaves off" is by far a State record for heavy rainfall.

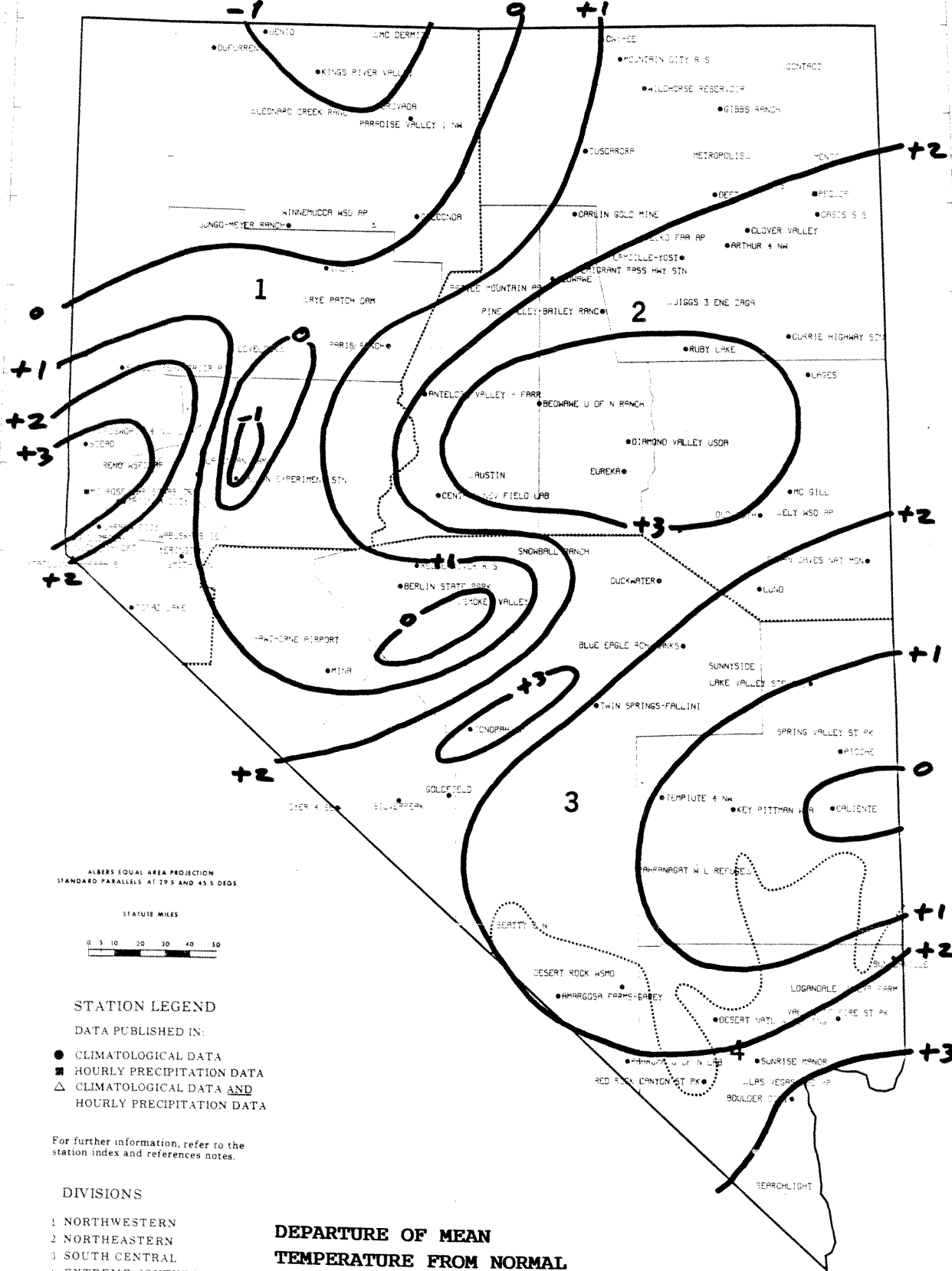
Another early weather note comes to us from O.B. Vincent, the Austin weather observer 100 years ago. He notes in February 1890, "Snowfall is unprecedented in this section since first settlement. Travel in all directions is suspended; cattle and sheep are dying on the ranges by the 100's; all vegetation is completely covered by snow." He also notes one year later concerning the great snowstorms of December 29-30, 1891: "Pioneers have no recollection of so much snow in a single storm (22"), and having the snow pack so deep."

The Beowawe Southern Pacific Railroad agent weather observer noted on December 29, 1899 that he "saw a brilliant meteor in the west sky. It gave off a light like a full moon. When near the surface there were two explosions with the sound of heavy artillery." Wow! Shades of Orson Wells!

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State Climatologist

120.0 119.0 118.0 117.0 116.0 115.0 114.0

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ALBERS EQUAL AREA PROJECTION
 STANDARD PARALLELS AT 29.5 AND 45.5 DEGS

STATUTE MILES



35.0

